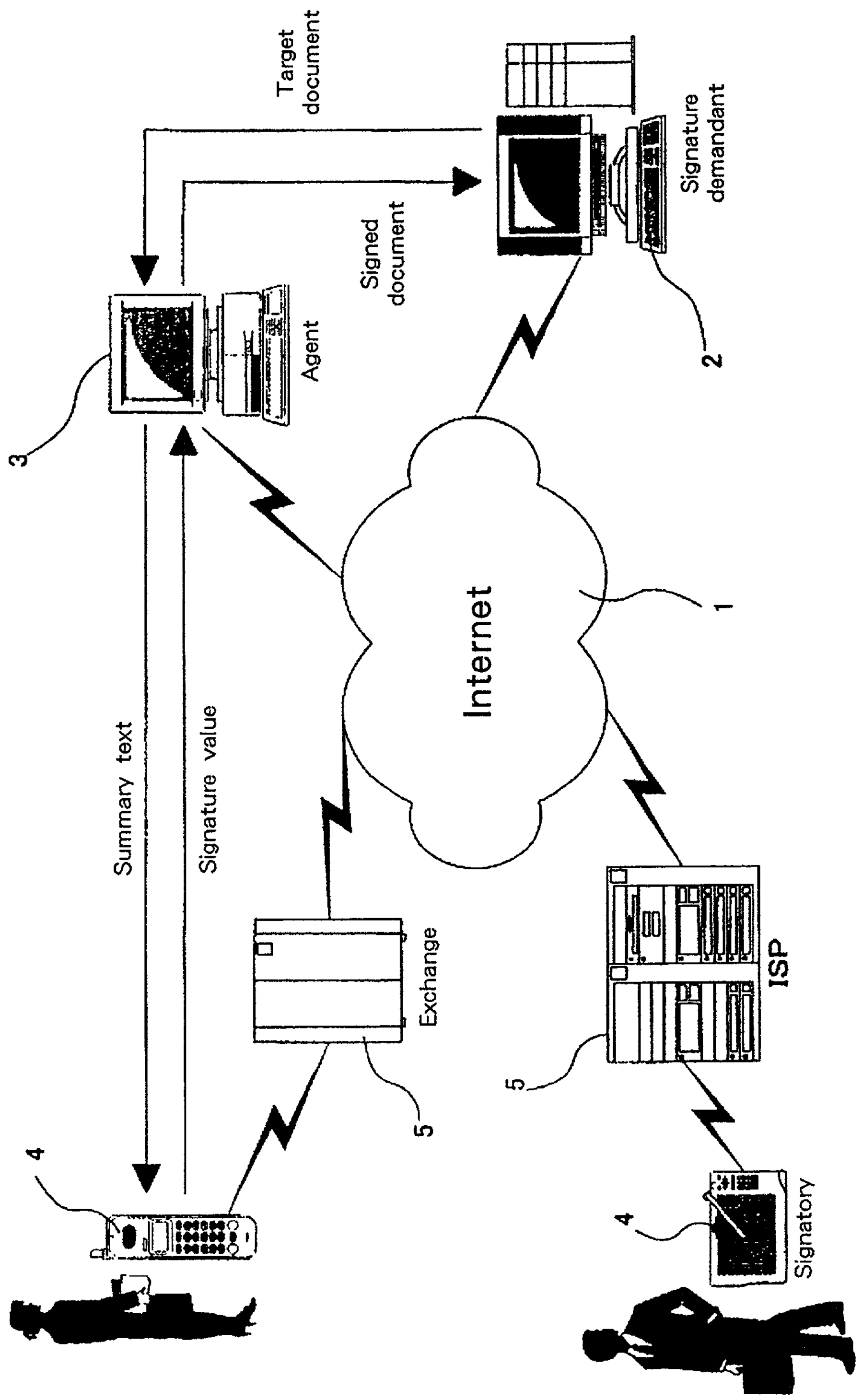
Target document
Signed document
Signature demandant
2
Agent
3
Internet
1
Summary text
Signature value
Exchange
5
ISP
5
4
Signatory
4

Fig. 1

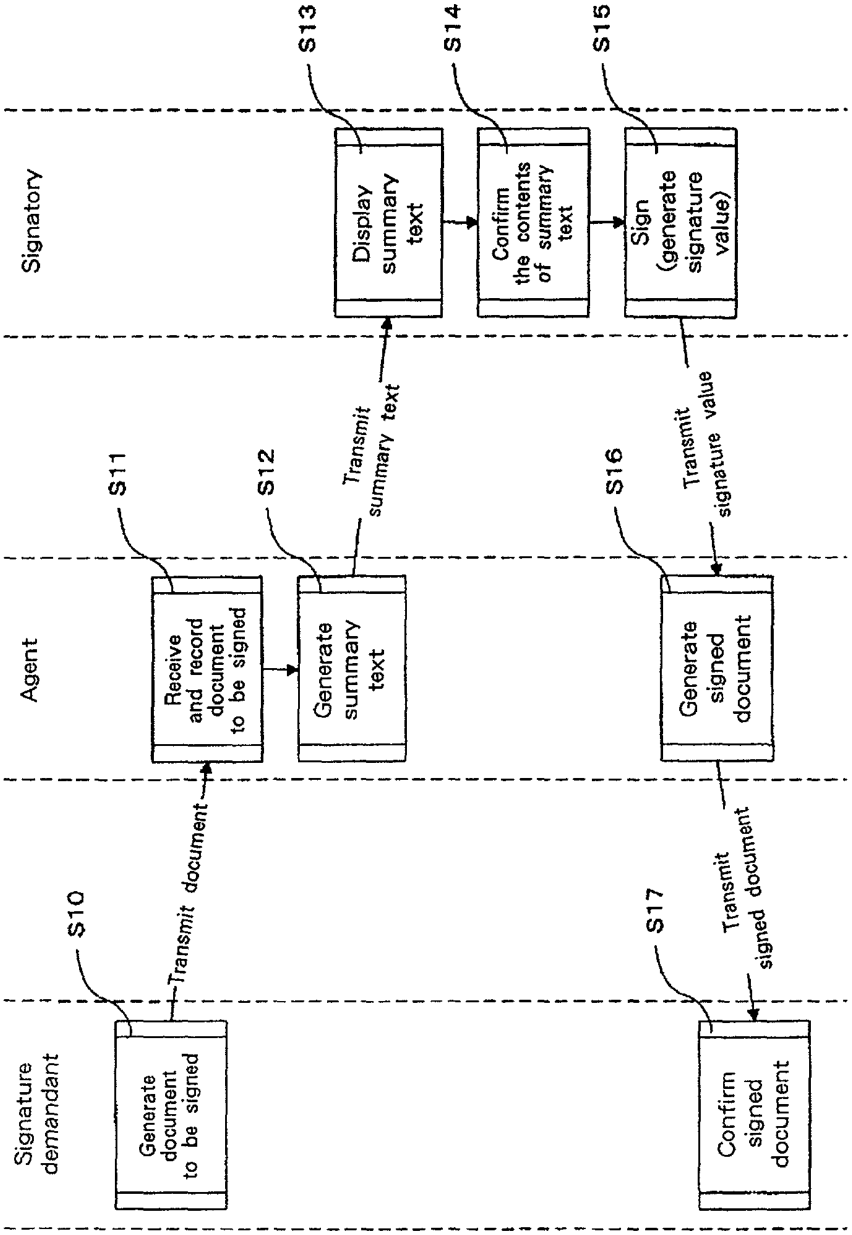
Signature demandant
Agent
Signatory
S10
Generate document to be signed
Transmit document
S11
Receive and record document to be signed
S12
Generate summary text
Transmit summary text
S13
Display summary text
S14
Confirm the contents of summary text
S15
Sign (generate signature value)
Transmit signature value
S16
Generate signed document
Transmit signed document
S17
Confirm signed document

Fig. 2

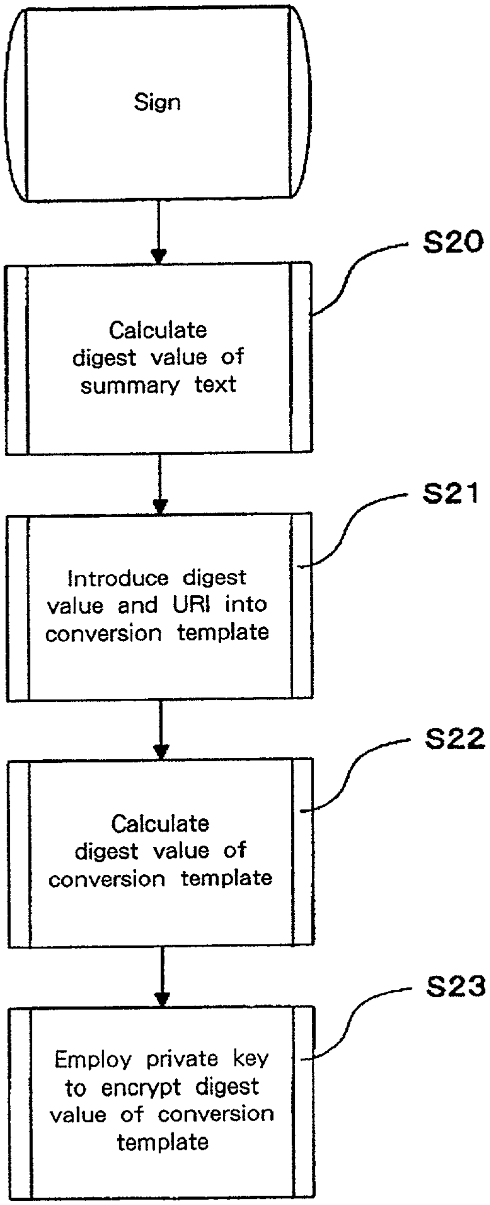
Sign
S20
Calculate digest value of summary text
S21
Introduce digest value and URI into conversion template
S22
Calculate digest value of conversion template
S23
Employ private key to encrypt digest value of conversion template

Fig. 3

```xml
<?xml version="1.0" encoding="UTF-8"?>
<Invoice>
  <bookorder>
    <item>
      <title>XML and Java</title>
      <ISBN>0201485435</ISBN>
      <quantity>1</quantity>
      <price>39.95</price>
    </item>
  </bookorder>
  <payment>
    <payTo>AAAAA.com, Inc.</payTo>
    <billedTo>Hiroshi Maruyama</billedTo>
    <amount unit="USD">39.95</amount>
    <dueDate>Apr., 3, 2000</dueDate>
    <paymentMethod>
      <creditCard>
        <cardType>MasterCard</cardType>
        <cardHolderName>Hiroshi Maruyama</cardHolderName>
        <expirationDate>04/2001</expirationDate>
        <cardNumber>5283 8304 6232 0010</cardNumber>
      </creditCard>
    </paymentMethod>
  </payment>
</Invoice>
```

Fig. 4

I, Hiroshi Maruyama, will pay 39.95 USD to AAAAA.com, Inc. by Apr., 3, 2000 for the purchase of 1 QTY of book titled XML and Java.

Fig. 5

```
<n1:SignedInfo xmlns:n1="http://www.w3.org/2000/01/xmldsig/">
 <n1:CanonicalizationMethod xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
   Algorithm="http://www.w3.org/TR/1999/WD-xml-c14n-19991115"></n1:CanonicalizationMethod>
 <n1:SignatureMethod xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
   Algorithm="http://www.w3.org/2000/01/xmldsig/dsa"></n1:SignatureMethod>
 <n1:Reference xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
   URI="%document to be signed URI%">
  <n1:Transforms xmlns:n1="http://www.w3.org/2000/01/xmldsig/">
   <n1:Transform xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
     Algorithm="http://www.w3.org/TR/1999/PR-xpath-19991008">
    concat("I, ", /Invoice/payment/billedTo, ", will pay ", /Invoice/payment/amount, " ",
         /Invoice/payment/amount/@unit, " to ", /Invoice/payment/payTo, " by ",
         /Invoice/payment/dueDate, " for the purchase of ",
         /Invoice/bookorder/item/quantity, " QTY of book titled ",
         /Invoice/bookorder/item/title, ".")
   </n1:Transform>
   <n1:Transform xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
     Algorithm="http://www.w3.org/TR/1999/WD-xml-c14n-19991115"></n1:Transform>
  </n1:Transforms>
  <n1:DigestMethod xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
     Algorithm="http://www.w3.org/2000/01/xmldsig/sha1"></n1:DigestMethod>
  <n1:DigestValue xmlns:n1="http://www.w3.org/2000/01/xmldsig/"
     Encoding="http://www.w3.org/2000/01/xmldsig/base64">
    %digest value of the summary text %
  </n1:DigestValue>
 </n1:Reference>
</n1:SignedInfo>
```

Fig. 6

```
<?xml version="1.0" encoding="UTF-8"?>
<Signature xmlns="http://www.w3.org/2000/01/xmldsig/">
  <SignedInfo>
    <CanonicalizationMethod Algorithm="http://www.w3.org/TR/1999/WD-xml-c14n-19991115"/>
    <SignatureMethod Algorithm="http://www.w3.org/2000/01/xmldsig/dsa"/>
    <Reference URI="http://www.myagent.com/myorder/2000/0321.xml">
      <Transforms>
           <Transform Algorithm="http://www.w3.org/TR/1999/PR-xpath-19991008">
      concat("I, ", /Invoice/payment/billedTo, ", will pay ", /Invoice/payment/amount, " ",
            /Invoice/payment/amount/@unit, " to ", /Invoice/payment/payTo, " by ",
            /Invoice/payment/dueDate, " for the purchase of ",
            /Invoice/bookorder/item/quantity, " QTY of book titled ",
            /Invoice/bookorder/item/title, ".")
           </Transform>
        <Transform Algorithm="http://www.w3.org/TR/1999/WD-xml-c14n-19991115"/>
      </Transforms>
      <DigestMethod Algorithm="http://www.w3.org/2000/01/xmldsig/sha1"/>
      <DigestValue Encoding="http://www.w3.org/2000/01/xmldsig/base64">
        KnkofqqssClNIew59DrhE6Hnrpk=
      </DigestValue>
    </Reference>
  </SignedInfo>
  <SignatureValue>
    MCwCFBvOeJygByRVVHjM0YJ47qfkoDITAhRr8u90oIGcXrKz0uNIRJiQTYGRhw==
  </SignatureValue>
  <KeyInfo>
    <X509Data>
      <X509Name>CN=Hiroshi Maruyama, OU=TRL, O=IBM, C=JP</X509Name>
      <X509Certificate>
 MIICvTCCAnsCBDh2hc4wCwYHKoZIzjgEAwUAMEQxCzAJBgNVBAYTAkpQMQwwCgYDVQQKEwNJQk
 0xDDAKBgNVBAsTA1RSTDEZMBcGA1UEAxMQSGlyb3NoaSBNYXJ1eWFtYTAeFw05OTEyMTcwMDM3
 MzRaFw0wMDAzMTYwMDM3MzRaMEQxCzAJBgNVBAYTAkpQMQwwCgYDVQQKEwNJQk0xDDAKBgN
 VBAsTA1RSTDEZMBcGA1UEAxMQSGlyb3NoaSBNYXJ1eWFtYTCCAbgwggEsBgcqhkjOOAQBMIIBHwK
 BgQD9f1OBHXUSKVLfSpwu7OTn9hG3UjzvRADDHj+AtlEmaUVdQCJR+1k9jVj8v8X1ujD2y5tVbNeBO4A
 dNG/yZmC3a5lQpaSfn+gEexAiwk+7qdf+t8Yb+DtX58aophUPBPuD9tPFHsMCNVQTWhaRMvZ1864rYdcq
 7/IiAxmd0UgBxwIVAJdgUI8VIwvMspK5gqLrhAvwWBz1AoGBAPfhoIXWmz3ey7yrXDa4V7l5lK+7+jrqgvlXT
 As9B4JnUVlXjrrUWU/mcQcQgYC0SRZxI+hMKBYTt88JMozIpuE8FnqLVHyNKOCjrh4rs6Z1kW6jfwv6ITVi
 8ftiegEkO8yk8b6oUZCJqIPf4VrlnwaSi2ZegHtVJWQBTDv+z0kqA4GFAAKBgQCE12KsJ2zPP0F+VuR4xGl
 Q23ogU47HmOY4TEGrUCuYE9xjqo+Oh/7PtnKj/9+OmSNH1HDiY4GYh3KnjfwB7+2BmAwVLB0kkYZwdc
 zb5aok7pj7UQliRgOp2b/08Fq4ZBDA483SrVwiCvuT3STGQykEyPw4wkXgipwGb+NDfKUqCzALBgcqhkjO
 OAQDBQADLwAwLAIUZeGr8xv9/LwgNBFbr9IkSq2wy5QCFHJOnTNGgisZOl61+O2ycivp0XHE
        </X509Certificate>
      </X509Data>
    </KeyInfo>
  </Signature>
```

Fig. 7